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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,704	09/17/2003	Yoichi Nemugaki	242935US3	3973
22850 7590 04/05/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER LAZORCIK, JASON L	
			ART UNIT 1731	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		04/05/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/663,704

Applicant(s)

NEMUGAKI, YOICHI

Examiner

Jason L. Lazorcik

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-11 and 14 is/are rejected.
- 7) ☐ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitation set forth in the immediate claim wherein the sheet is used for "a window glass of automobiles" amounts to a statement of intended use and therefore provides no further limitation to the parent claim 8 drawn to the method of air-cooling and tempering said sheet.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemugaki (WO 00/78685 where US 6,722,160 B1 is applied as the English language translation) in view of Dominka (US 5,494,254).

Art Unit: 1731

As previously presented with respect to **Claim 8**, Nemugaki teaches (see Claim 1) an “air-cooling/tempering method for air cooling and tempering a glass plate” comprising

- 1) “a transferring device” or conveying means
- 2) Providing “a plurality of air-blowing heads positioned along the transferring device which blow air to the upper and lower faces of the glass plates” which are held equivalent to the plurality of upper and lower blowing methods. It is understood that since the blowing of air can be “started and stopped, the apparatus inherently incorporates an air-supply which is capable of controlling the “blow/stop” operation of cooling air to each of the blowing members
- 3) The process comprises “stopping the blowing of air in the air-blowing area” which is held equivalent to the claimed step of “stopping the cooling air from all of the upper and lower blowing members in the cooling area in an initial state”,
- 4) A second step of “starting the blowing of air when “an entirety of the glass plate is transferred into (the apparatus” which is held equivalent to the claimed step of “flowing cooling air from all of the upper and lower blowing members when the substantially whole of a conveyed glass sheet is entered in the cooling area,
- 5) And a further step of “stopping the blowing” and as set forth in the reference claim 3 stopping said blowing in “a sequential order of areas though which the glass plate is passed” which is held equivalent to the claimed process of

sequentially stopping the cooling air blown to the conveyance position of the glass sheet after the last glass sheet in the cooling area is passed.

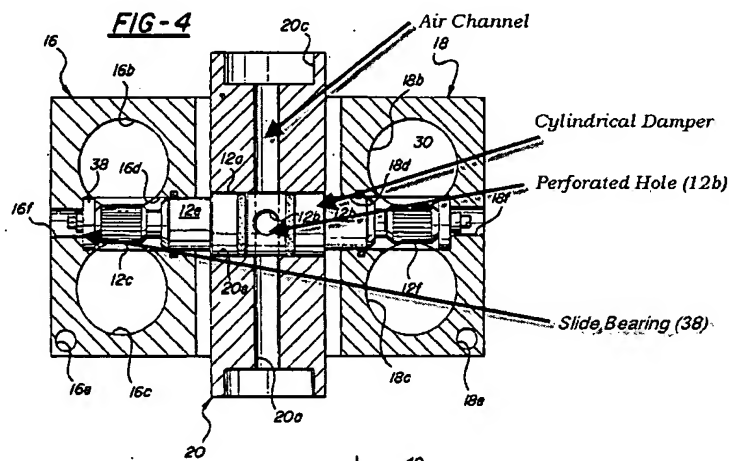
Regarding **claims 10 and 11**, the immediate reference clearly indicates that the “transferring device comprises a plurality of tempering rollers” (Column 22, Line 22-23) and that said rollers “move vertically with the transfer of the glass plate” (Column 22, Lines 30-32).

With respect to the newly added limitations directed to the structure of the cylindrical dampers, Nemugaki ‘160 teaches with reference to figure 8 that “dampers 250S...252b..are respectively provided at air supply ports...formed in air-blowing boxes. The dampers ...are controlled independently to be opened and closed by means of a controller (not shown) respectively” (Column 15, lines 1-11). Nemugaki ‘160 is silent regarding the particular structural details of these dampers. However absent any unexpected and compelling evidence to the contrary, it is the Examiners position that that one of ordinary skill in the art could here substitute any design of damper or other valve capable of providing the requisite independent control over air flow in each of the air blowing heads under typical operating conditions.

With this point in mind, Dominka (US 5,494,254) teaches a rotary shut off valve (see figures 4 below) comprising a cylindrical damper (12) with perforated hole (12b) provided at the side of the damper, a casing (16 and 20) for rotatably accommodating the damper, and a “slide” bearing (30 and 38) between the damper and the casing. When the cylindrical damper is provided at a predetermined rotational position, a

Art Unit: 1731

continuous communication path along the central flow passage (20a) through the perforated hole (12b) of the cylindrical damper is provided. Since Dominka teaches that the disclosed valve design advantageously provides precision actuation, low associated construction and installation costs, and enhanced durability with low maintenance requirements (Column 1, Lines 35-41), it would have been an obvious design choice for the dampers described in the Nemugaki apparatus.



Further, a modification of the Nemugaki apparatus to include the flow dampers set forth by Dominka would likewise implicitly impart the claimed step of “adjusting the rotational position of the dampers” into each of the identified process steps 3, 4, and 5, above.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nemugaki (WO 00/78685 where US 6,722,160 B1 is applied as the English language translation) as applied above to Claim 8 and further in view of Nikander (US 5,846,281). In short as set forth above, Nemugaki '160 teaches the apparatus for conveying a glass sheet comprising the claimed upper and lower blowing members in parallel along the

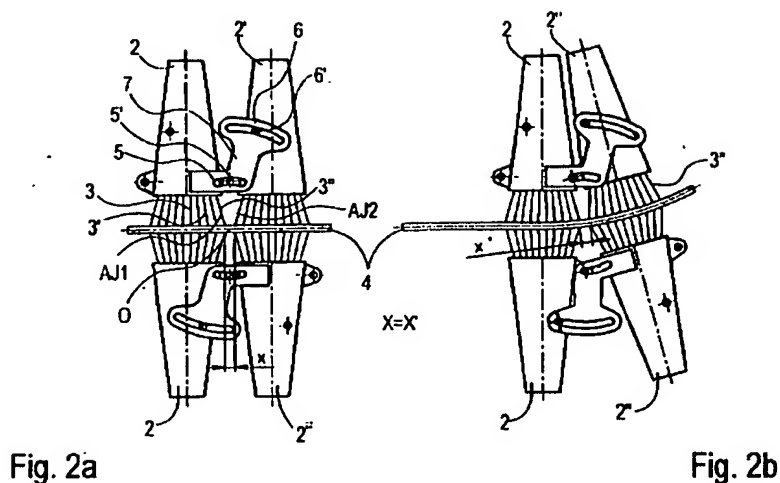
Art Unit: 1731

conveyance direction along with the requisite air-supply boxes and air supply source.

The reference further teaches a method of conveying and tempering the glass sheet by first stopping the flow of cooling air from all blowing members, second conveying a sheet into the cooling area, third start cooling air flow from all blowing members, and fourth sequentially stopping cooling air flow as the sheet is conveyed downstream of a given upper/lower blowing member.

As set forth in the prior office action, the Nemugaki '160 reference indicates that "the air-blowing heads are each disposed between the adjacent tempering rollers ...and configured to move vertically" (column 22, lines 35-37). The heads are raised and lowered in response to the conveyance of the glass sheet along the direction of conveyance. The air nozzle associated with each of these blowing heads is therefore understood to be "swingable" in the conveying direction of the glass sheet. That said, Nemugaki is silent regarding the particular process limitation wherein "the cooling air is blown perpendicularly to a surface of the conveyed glass sheet by swinging the air nozzle".

The Patent to Nikander (US 5,846,281) teaches a quench head for use in a glass tempering operation. Specifically, Nikander teaches that the coolant impinging on the glass surface from the quench head air jet should be "about perpendicular to the main planar surface of the glass and does not deviate from the perpendicular direction more than 20 degrees" (Column 1, Lines 15-23). Regarding the particular structure of the Nikander apparatus, the reference discloses an upper and lower quench head comprising sequential rows of air blowing heads or nozzle blocks.



As depicted in the excerpt figures 2a and 2b above, the Nikander apparatus provides vertical and horizontal adjustment of individual nozzle blocks relative to adjacent nozzle blocks in order to maintain a constant spacing and a near perpendicular allignment between the glass sheet and the nozzle head (Claim 1). Given the reported advantages in tempering quality and the reduced energy consumption associated with maintaining proper alignment of the quench head with the glass sheet surface (Column 1, line 23-42), it would have been obvious to one of ordinary skill in the art to seek to modify the Nemugaki apparatus to insure proper spacing and alignment of the blowing members with respect to the conveying glass sheet (see Fig 1c).

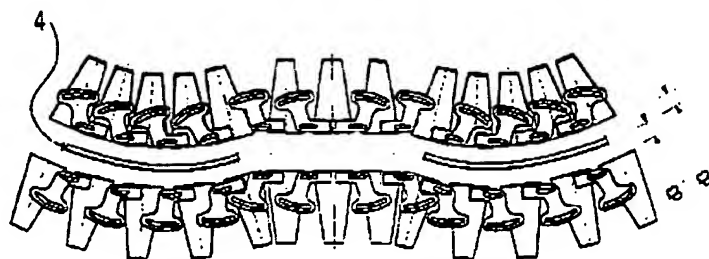


Fig. 1c

Art Unit: 1731

Therefore in light of the Nikander teachings, it would have been obvious to one of ordinary skill in the art to modify the Nemugaki '160 apparatus with the Nikander adjustable air-nozzles, which are "swingable" in the conveyance direction of the glass sheet, in order to maintain proper spacing and alignment of said blowing members with the conveyed sheet.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nemugaki (WO 00/78685 where US 6,722,160 B1 is applied as the English language translation) and Dominka (US 5,494,254) as applied above to Claim 8 and further in view of Nikander (US 5,846,281). As set forth above, the Dominka modification to Nemugaki '160 teaches the claimed rotational damper assembly and Nikander teaches the claimed swingable air-nozzles to maintain perpendicular alignment between the glass sheet and said nozzles. Therefore the particular limitations set forth in the instant claim are rendered prima facie obvious over the combined prior art of record.

Response to Arguments

Applicant's arguments with respect to claims 8-11 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1731

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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